

CLAIMS

1. A method to integrate an application in a computerized system for control of a real world object, which system comprises a first software object with a first interface (4) which said interface is recognisable by an Object Request Broker, **characterized** in that the method comprises the steps of:
- representing said real world object as said first software object, hereafter called a Composite Object (40, 10, 6, 18, 25-27), which contains an Aspect (41, 6a, 18a, 25a-27a),
 - 10 -representing a facet of said real world object as the Aspect (41, 6a, 18a, 25a-27a) of the Composite Object (40, 10, 6, 18, 25-27),
 - associating said application with the Aspect (41, 6a, 18a, 25a-27a),
 - 15 -enabling a query (13) from a client to the Composite Object (40, 10, 6, 18, 25-27) for a function associated with the Aspect (41, 6a, 18a, 25a-27a) of the Composite Object (40, 10, 6, 18, 25-27),
 - answering said query (13) to the Composite Object (40, 10, 6, 18, 25-27) with a reference (103) pointing to a second interface (102) associated with said application,
 - 20 -providing the second interface (102) by means of a second software object hereafter called an Aspect System Object (101) which implements the function queried for.
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2. A method according to claim 1, **characterized** in that the Composite Object (40, 10, 6, 18, 25-27) provides information about the Aspect (41, 6a, 18a, 25a-27a) that is associated with the Composite Object (40, 10, 6, 18, 25-27) by means of an
- 30 Aspect Type (8) to which the Aspect belongs.
3. A method according to claim 1, **characterized** in that the interface implemented by the Aspect System Object (101) is accessed through said Object Request Broker.

4. A method according to claim 1, **characterized** in that the Aspect (41, 6a, 18a, 25a-27a) belongs to an Aspect Category (19, 19a) which contains a reference to the Aspect Type (8), which Aspect Type (8) contains a first reference (9) to an Aspect System Object (101).

5. A method according to claim 1, **characterized** in that the first reference (9) to the Aspect System Object (101) is a class identifier CLSID.

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6. A method according to claim 3, **characterized** in that the Aspect System Object (101) is arranged to provide said interface (102) which via said Object Request Broker is in-process, or local, or remote.

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7. A method according to claim 1, **characterized** in that said Object Request Broker complies with COM.

8. A method according to claim 4, **characterized** in that Aspect inheritance is described in the Aspect Category (19, 19a) to which the Aspect (41, 6a, 18a, 25a-27a) belongs.

9. A method according to claim 1, **characterized** in that the Composite Object (40, 10, 6, 18, 25-27) is organized in a Structure (20).

10. A method according to claim 9, **characterized** in that the Composite Object (40, 10, 6, 18, 25-27) is organized by being placed in more than one position in the Structure (20).

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11. A method according to claim 9, **characterized** in that the Composite Object (40, 10, 6, 18, 25-27) is organized by being placed in more than one Structure (20).

12. A method according to claim 9, **characterized** in that the Aspect (25a) of a first Composite Object (25) in a Structure (20), marked as "to-be-inherited-within-the-same-Structure" is inherited by at least one second Composite Object (26, 27) organized subordinated in the same Structure (20).

13. A method according to claim 1, **characterized** in that at least one additional function is added by the additional steps of

10 -defining an additional Aspect system containing an Aspect System Object (101)

-describing an Aspect Type (8) that is implemented in the additional Aspect system

-listing in the Aspect Type (8) the Aspect System Object (101)

15 which is accessed through said Object Request Broker.

14. A system for computerized control of a real world object, which system includes an application and an Object Request Broker, said system including a plurality of computers that are

20 arranged with communication devices communicating with computer systems, computer networks, intelligent and non-intelligent devices, and comprising a first software object with a first interface (4) which is recognizable by said Object Request Broker, **characterized** in that said system comprises:

25 -said software object hereafter called a Composite Object (40, 10, 6, 18, 25-27) representing said real world object,

-an Aspect (41, 6a, 18a, 25a-27a) of the Composite Object (40, 10, 6, 18, 25-27), representing a facet of said real world object, and associated with said application, wherein

30 the Composite Object (40, 10, 6, 18, 25-27) is a container for the Aspect (41, 6a, 18a, 25a-27a) and is arranged to provide a reference (103) to an interface (102) of said application which said interface (102) is implemented by a second software object hereafter called an Aspect System Object (101).

15. A system according to claim 14, **characterized** in that the Composite Object (40, 10, 6, 18, 25-27) provides information about the Aspect (41, 6a, 18a, 25a-27a) by means of an Aspect Type (8) to which the Aspect of the Composite Object belongs.

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16. A system according to claim 14 or 15, **characterized** in that said interface (102) implemented by an Aspect System Object (101) is accessed through said Object Request Broker.

10 17. A system according to claim 14, **characterized** in that the first reference (9) to the Aspect System Object (101) is a class identifier.

15 18. A system according to claim 14, **characterized** in that the Aspect (41, 6a, 18a, 25a-27a) belongs to an Aspect Category (19, 19a) which contains a reference to an Aspect Type (8), which Aspect Type (8) contains a reference to an Aspect System Object (101).

20 19. A system according to claim 16, **characterized** in that the Aspect System Object (101) is arranged to provide said interface (102) which via said Object Request Broker is in-process, or local, or remote.

25 20. A system according to claim 19, **characterized** in that the interface (102) implemented by the Aspect System Object is remote and is accessed by said Object Request Broker at least in part by means of a wireless link provided by one of said communication devices.

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21. A system according to claim 14, **characterized** in that said Object Request Broker complies with COM.

22. A system according to claim 14, **characterized** in that Aspect inheritance is described in an Aspect Category (19, 19a) to which the Aspect (41, 6a, 18a, 25a-27a) belongs.

5 23. A system according to claim 14, **characterized** by that the Composite Object (40, 10, 6, 18, 25-27) is organized in a Structure (20).

10 24. A system according to claim 23, **characterized** by that the Composite Object (40, 10, 6, 18, 25-27) is organized by being placed in more than one position in the Structure (20).

15 25. A system according to claim 23, **characterized** by that the Composite Object (40, 10, 6, 18, 25-27) is organized by being placed in more than one Structure (20).

20 26. A system according to claim 23, **characterized** by that the Aspect (25a) of a first Composite Object (25) in a Structure (20) marked "to-be-inherited-within-the-same-Structure" is inherited by at least one second Composite Object (26, 27) organized subordinated in the same Structure (20).

25 27. A system according to claim 14, **characterized** in that at least one additional function may be added comprising
-an additional Aspect system containing one or more Aspect System Objects (101)
-one or more Aspect types that are implemented in the further Aspect system
-a listing in each Aspect type of one or more Aspect System
30 Objects (101) which may be accessed through said Object Request Broker.

28. A computer program product containing software code means loadable into the internal memory of a computer in a

computerized system, **characterized** in that said computer program product has means to make said computer carry out the steps of a method according to claim 1.

5 29. A computer program product according to claim 28, **characterized** in that said computer program product has means to make said computer carry out the steps of a method according to any of claims 2-13.

10 30. A computer program product according to claim 28 embodied on a computer readable medium.

31. Use of a computer program product according to claim 28 to control a real world object located in an industrial or
15 commercial location, a residence or a home.

32. Use of a system according to claim 14 to control a real world object located in an industrial or commercial location, a residence or a home.